

LISTING OF CLAIMS

1. (Currently amended). A UV-curable adhesive composition comprising:
a vinyl-ether terminated urethane synthesized from at least one polyester polyol and at least one aliphatic diisocyanate; and
a poly-functional mercaptan[[[,]]] and
the absence of exogenous photoinitiators.
2. (Cancelled). The UV-curable adhesive composition, according to claim 1, wherein said urethane is synthesized from at least one polyester polyol and at least one aliphatic diisocyanate.
3. (Previously presented). The UV-curable adhesive composition, according to claim 1, wherein said urethane has a molecular weight, $<M_n>$, in the range of 1000 to 50,000, more preferably 2000 to 12,000 and most preferably 3000 to 7000.
5. (Previously presented). The UV-curable adhesive composition, according to claim 1, wherein said polyol has a molecular weight in the range of from about 1000 to about 3200 AMU.
6. (Previously presented). The UV-curable adhesive composition, according to claim 1, wherein said diisocyanate is selected from the group consisting of dicyclohexylmethane diisocyanate, IPDI, and TMDI.
7. (Previously presented). The UV-curable adhesive composition, according to claim 1, wherein said poly-functional mercaptan has at least 2 thiol groups.
8. (Previously presented). The UV-curable adhesive composition, according to claim 1, wherein said poly-functional mercaptan is selected from the group consisting of

ethylene bis(3-mercaptopropionate),
trimethylolpropane tris(2-mercaptoacetate),
trimethylolpropane tris(3-mercaptopropionate),
triethyl-1,3,5,-triazine-2,4,6-trione tris(3-mercaptopropionate),
pentaerythritol tetrakis(2-mercaptoacetate),
pentaerythritol tetrakis(3-mercaptopropionate),
dimethyl bis(3-mercaptopropyl)silane,
1,6-hexanedithiol,
1,10-decanedithiol, and
3,6-Dioxaoctane-1,8-dithiol.

9. (Previously presented). The UV-curable adhesive composition, according to claim 1, wherein said poly-functional mercaptan is a 3-mercaptopropionic acid ester of a polyhydroxy compound.

10. (Previously presented). The UV-curable adhesive composition, according to claim 9, wherein said polyhydroxy compound is selected from the group consisting of glycols, propylene glycol, butanediol, hexanediol, cyclohexanedimethanol, glycerol, polyethylene glycol, polypropylene glycol, and polyester polyols.

11. (Previously presented). The UV-curable adhesive composition, according to claim 1, wherein said poly-functional mercaptan is trimethylpropane tris(trimercaptopropionate).

12. (Previously presented). The UV-curable adhesive composition, according to claim 1, further comprising at least one additive selected from the group consisting of polymerization inhibitors, antioxidants, tackifiers, flow and leveling agents, pigments, fillers, odor-masking agents, and UV-stabilizers.

13. (Currently amended). A thiolene composition comprising the reaction product of:

a vinyl-ether terminated urethane synthesized from at least one polyester polyol and at least one aliphatic diisocyanate; and

a poly-functional mercaptan; and
the absence of exogenous photoinitiators;

wherein

said composition is crosslinked with a curing agent.

14. (Previously presented). The thiolene composition, according to claim 11, wherein said curing agent is ultraviolet light.

15. (Currently amended). A thiol-ene formulation curable to a crosslinked polymer comprising:

a polyfunctional mercaptan; and

a vinyl-terminated urethane synthesized from at least one polyester polyol and at least one aliphatic diisocyanate.

16. (Currently amended). An adhesive product comprising

a layer of a backing material; and

a layer of a curable thiol-ene formulation comprising:

a polyfunctional mercaptan, and

a vinyl-terminated urethane synthesized from at least one polyester polyol and at least one aliphatic diisocyanate, wherein said thiol-ene formulation is cured to a crosslinked polymer.

17. (Currently amended). A method of using a curable thiol-ene formulation comprising:

providing a backing material;

providing on said backing material a layer of a curable thiol-ene formulation comprising:

a polyfunctional mercaptan, and

a vinyl-terminated urethane synthesized from at least one polyester polyol and at least one aliphatic diisocyanate; and

curing said thiol-ene formulation.

18. (Previously presented). The method of using a curable thiol-ene formulation, according to claim 17, further comprising applying said formulation with a hot-melt coater.

19. (Previously presented). A hot-melt coater containing the curable thiol-ene formulation of claim 1.